

WHAT IS CLAIMED IS:

1 1. An optical switching system, the optical switching system comprising:
2 an optical cross-connect, the optical cross connect having a plurality of
3 mechanical switching devices, each of the switching devices being capable of deflecting a
4 light beam from an input port to an output port;
5 a communication interface bus coupled to the optical cross-connect;
6 a first routing module coupled to the communication interface bus, the first
7 routing module comprising a route forwarding table; and
8 a second routing module coupled to the communication interface bus, the second
9 routing module being adapted to provide a redundant process for the first routing module,
10 the second routing module being adapted to receive a copy of a portion of the route
11 forwarding table from the first routing module during a time period that the first routing
12 module is active while the second routing module is in a standby state.

1 2. The system of claim 1 wherein the first routing module comprises an IP
2 address.

1 3. The system of claim 1 wherein the second routing module comprises at
2 least an IP address that is the same as the IP address from the first routing module only
3 when the second routing module is in an active state.

1 4. The system of claim 1 wherein the route forwarding table is provided in
2 random access memory, the random access memory comprising at least 128 MB.

1 5. The system of claim 4 wherein the random access memory has a read
2 access time of less than thirty nanoseconds.

1 6. The system of claim 1 wherein the first routing module and the second
2 routing module are each coupled to a hub.

1 7. The system of claim 1 wherein the first routing module further comprises a
2 route database, the route database comprising random access memory.

1 8. The system of claim 7 wherein the route database is dynamic.

1 9. An optical switching system having a redundant route control for out of
2 band communication interface, the optical switching system comprising:

a optical cross-connect having a plurality of mechanical switching devices, each of the switching devices being capable of defecting a light beam from an input port to an output port in an in-band communication interface;

a communication interface bus coupled to the optical cross-connect;

a first routing module coupled to a first network connection for an out of band communication interface, the first routing module also coupled to the communication interface bus; and

a second routing module coupled to a second network connection for an out of band communication interface, the second routing module also coupled to the communication interface bus, the second routing module being adapted to provide a redundant process for the first routing module;

wherein the out of band communication interface is free from an interaction with the in-band communication interface such that the out of band communication interface communicates through an alternative path from the in-band communication interface.

10. The system of claim 9 wherein the first routing module comprises a route forwarding table and wherein the second routing module adapted to provide a redundant process for the first routing module, the second routing module adapted to receive a copy of the route forwarding table from the first routing module during a time period that the first routing module is active.

11. In an optical switching system, a method for providing redundant out of band communication, the method comprising:

- receiving an update of information from a network;
- calculating route information based upon the update of information;
- updating route forwarding information based upon the route information in a first volatile memory location; and
- updating route forwarding information based upon the route information in a second volatile memory location.

12. The method of claim 11 wherein the receiving and calculating are provided in a first routing module.

1 13. The method of claim 11 wherein the updating the second volatile memory
2 location is provided in a second routing module, the second routing module being a
3 backup to the first routing module.

1 14. The method of claim 11 wherein updating the first volatile memory
2 location and updating the second volatile memory location are provided at about the same
3 time.

1 15. The method of claim 11 wherein the updating the second volatile memory
2 location is provided while a first routing module comprising the first volatile memory
3 location is active.